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Appeal Brief Incomplete 4/2/02

Patent
Docket No.: 51466US009

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Andrew J. Ouderkirk et al. Serial No.: 09/781,639 Filed: February 12, 2001 For: TRANSFLECTIVE DISPLAYS WITH REFLECTIVE POLARIZING TRANSFLECTOR	Group Art Unit: 2872 Examiner: A. Chang

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SUBMISSION OF BRIEF ON APPEAL

Commissioner for Patents and Trademarks
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Sir:

Please find an original and two copies of Appellant's Brief on Appeal submitted herewith by virtue of a Notice of Appeal filed September 14 2001, in the above-identified application.

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Respectfully submitted,

14 Nov. 2001
Date

By /Robert J Pechman/
Robert J. Pechman
Registration No. 45,002

Office of Intellectual Property Counsel
3M Innovative Properties Company
P.O. Box 33427
St. Paul, Minnesota 55133-3427
Telephone: (651) 737-0631
Facsimile: (651) 736-3833

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APPELLANT'S BRIEF ON APPEAL

REAL PARTY IN INTEREST

Minnesota Mining and Manufacturing Company, a Delaware Corporation, and 3M Innovative Properties Company, a Delaware Corporation, are the real parties in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

Claims 9-17 are pending in the application. Claims 9-17 stand rejected and are being appealed.

STATUS OF AMENDMENTS

The claims have not been amended since filing, and are reproduced in Appendix A.

SUMMARY OF INVENTION

The present invention is directed to a reflective display which includes a light modulator provided to selectively alter a polarization state of polarized light passing through the light modulator, a reflective polarizer positioned behind the light modulator to reflect light having a first polarization state and to transmit light having a second polarization state, and a rear dichroic polarizer positioned between the light modulator and the reflective polarizer to allow at least a portion of light reflected by the reflective polarizer to be transmitted back through the light modulator. The display system of the present invention combines a dichroic polarizer with a reflective polarizer that transmits one polarization state and reflects the other polarization state, and orients the dichroic and reflective polarizers in such a way that the dichroic polarizer transmits at least a portion of the light reflected by the reflective polarizer. This combination of polarizers is then disposed behind the liquid crystal cell.

ISSUES

There are four issues presented.[1]

The first issue is whether the Examiner was incorrect in stating that Appellants' application is not qualified to be regarded as a continuation-in-part application.

The second issue is whether the Examiner was incorrect in rejecting claims 9-17 under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,025,897 (Weber) or U.S. Pat. No. 5,828,488 (Ouderkirk).

The third issue is whether the Examiner was incorrect in rejecting claims 9-17 under 35 U.S.C. 102(f).

The fourth issue is whether the Examiner was incorrect in rejecting claims 9-17 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,560,241 (Stolov) in view of admitted prior art and, as to claims 10 and 11, in further view of U.S. Pat. No. 5,486,949 (Schrenk).

Appellants' arguments will show that the Examiner was incorrect in each of these instances, and that favorable consideration should be granted.

GROUPING OF CLAIMS

For the purposes of this appeal, claims 9-17 stand or fall together.

APPELLANTS' ARGUMENTS

A. First Issue: Objection to Designation of Present Application as a CIP

Appellants' amended the application to claim priority to USSN 08/402,349, now U.S. Pat. No. 5,828,488, as a continuation-in-part application. Appellants have satisfied the conditions of co-pendency and overlapping inventive entities with the 08/402,349 application.

[1] In addition to these four issues, the Office Action mailed June 18, 2001 made two rejections under the judicially created doctrine of obviousness-type double patenting: one rejecting claims 9 and 12 over claims 1 and 2 of USSN 09/490,879, now U.S. Pat. No. 6,262,842, and another rejecting claims 9-11, 13, and 16-17 over claims 1, 4, 17, 18, 31, 43-48, and 49-59 of U.S. Pat. No. 6,124,971. In a Communication mailed November 13, 2001, Appellants filed terminal disclaimers over U.S. Pat. Nos. 6,262,842 and 6,124,971 to render these obviousness-type double patenting rejections moot, thereby reducing the issues for appeal.

The Examiner is of the opinion that the present application is not qualified to be a continuation-in-part of 08/402,349 because "the claims of the instant application are fully disclosed by the parent application," and "an application is qualified to be regarded as a continuation-in-part application from a parent application only when the children [sic] application recites an improvement of the parent application." This is clearly wrong.

MPEP 201.8 states that a continuation-in-part application of an earlier application adds matter not disclosed in the earlier application. There is absolutely no requirement that what is claimed in the continuation-in-part application be an improvement over what is disclosed in the earlier application. Indeed, such a requirement would render continuation-in-part practice utterly meaningless. Why claim priority to a document if your claims are required to be an improvement over that document, ostensibly being unable to ever rely on such priority claim because the priority document does not disclose any of the newly claimed subject matter?

The Examiner's position does not square with the law. Appellants' application is a valid continuation-in-part application of the 08/402,349 application, and should be considered as such.

B. Second Issue: 102(e) Rejection over Ouderkirk and Weber References

1. As to the Ouderkirk Reference

The Examiner rejected claims 9-17 under 102(e) as being anticipated by Ouderkirk. Appellants note that the Ouderkirk reference is a patent that issued off of an application that was a continuation of USSN 08/402,349, the very application to which Appellants claim priority as a continuation-in-part. Appellants contend that the present claims cannot be rejected under 102(e) as being anticipated by a document to which they have a valid priority claim. To the extent that the subject matter of the present claims may be disclosed by Ouderkirk, then Appellants' claims share the earliest priority date enjoyed by the Ouderkirk reference. To the extent that the subject matter of the present claims might not be disclosed by Ouderkirk, then Appellants' claims cannot be anticipated by the Ouderkirk disclosure. As such, the 102(e) rejection over Ouderkirk has no legal basis and cannot be allowed to stand.

2. As to the Weber Reference

Weber and Ouderkirk share a common lineage. Their respective disclosures were filed on the same date (March 10, 1995) as continuations-in-part off of the same application (USSN 08/171,239).

The disclosure of Weber that the Examiner points to as anticipating the present claims is the same disclosure that is present in Ouderkirk. Therefore, due to their common lineage, the purported "anticipating disclosure" of Weber does not pre-date the same disclosure that exists in Ouderkirk, to which Appellant have perfected a valid priority claim. As such, to the extent that the present claims might be disclosed by Weber, they are not anticipated by Weber. As such, the 102(e) rejection over Weber should be overturned.

C. Third Issue: 102(f) Rejection

The Examiner rejected claims 9-17 under 35 U.S.C. 102(f), reasoning that because the Ouderkirk and Weber patents have inventive entities that differ from that of the present invention, the presently named inventors could not have invented the claimed subject matter. The Examiner's reasoning is flawed.

The Examiner has confused the concepts of disclosure and claim scope. Inventorship is based on the claimed invention, not on the scope of what is disclosed. Thus, it is entirely possible, and in fact it routinely occurs, that a patent application claiming subject matter disclosed in an issued U.S. patent has an inventive entity that is different from the inventive entity of the U.S. patent. For example, many continuation applications, divisional applications, and continuation-in-part applications disclose the same subject matter as their parent patents but have different inventive entities.

If Ouderkirk or Weber actually claimed the same invention being claimed by Appellants (which they do not), the proper rejection would be double patenting (because Ouderkirk and Weber are commonly assigned with the present application).

There is no conceivable basis in fact or law for the Examiner to conclude that the presently-named inventors did not invent the claimed subject matter. The 102(f) rejection cannot stand.

D. Forth Issue: 103(a) Rejection over Stolov in View of Admitted Prior Art

The Examiner rejected claims 9 and 12-17 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,560,241 (Stolov) in view of admitted prior art, and rejected claims 10 and 11 in further view of U.S. Pat. No. 5,486,949 (Schrenk).

Appellants' claims recite a reflective display that includes, "a light modulator...; a reflective polarizer positioned on the back side of the light modulator to reflect light having a first polarization state and to transmit light having a second polarization state; and a rear dichroic polarizer positioned between the light modulator and the reflective polarizer to allow at least a portion of light reflected by the reflective polarizer to be transmitted back through the light modulator."

Stolov discloses a liquid crystal display that includes a "conventional reflective or transflective rear polarizer" (col. 3, lines 59-60) positioned behind the liquid crystal and a dichroic polarizer positioned in front of the liquid crystal. The Examiner states that Appellants have admitted that dichroic polarizers have been conventionally used in liquid crystal displays positioned in front of or behind the liquid crystal. According to the Examiner, it would then be obvious to place a dichroic polarizer in the position claimed by Appellants in the display of Stolov. Appellants disagree with the rejection.

The Examiner correctly noted that conventional reflective displays use dichroic polarizers in front of and behind the liquid crystal display. In fact, the Stolov reference itself shows a rear dichroic polarizer. A "conventional reflective or transflective rear polarizer" as disclosed by Stolov is a dichroic (absorbing) polarizer with a mirror (or partial mirror when used as a transflector) behind it. What Stolov does not teach is a reflective polarizer that reflects one polarization state and transmits the other polarization state, as recited by Appellants' claims. Stolov's "conventional reflective or transflective rear polarizer" either reflects the light of one polarization state and transmits no light (dichroic polarizer plus a mirror), or reflects and transmits light of the same polarization state (dichroic polarizer plus a partial mirror). This identical issue was discussed during the prosecution of USSN 08/953,779, a parent application of the present application which issued as U.S. Pat. No. 6,124,971, with respect to a rejection over U.S. Pat. No. 5,550,660 (Yang). Ultimately, the Examiner agreed that the polarizing transflector

disclosed in Yang was not a reflective polarizer that reflected one polarization state and transmitted the other polarization state.

The Examiner has therefore failed to make a combination that includes the recited reflective polarizer in a reflective display along with the other claimed elements.

Schrenk discloses a birefringent interference polarizer that reflects one polarization state and transmits the other polarization state. However, there is nothing to teach or suggest that an absorbing polarizer would be used in combination with such a reflective polarizer. Thus, there is no motivation to make the further combination proposed by the Examiner.

Even so, Appellants also describe and claim a relative orientation of the reflective polarizer and dichroic polarizer that would allow at least a portion of the light reflected by the reflective polarizer to be transmitted back through the light modulator. This relative orientation is not taught or suggested in the references, although the Examiner argues that this is inherently true. The Examiner is clearly incorrect. For a function to be inherent, it must necessarily be present. One need look no further than the Ouderkirk and Weber references for evidence that the function of transmitting at least some of the light reflected by the reflective polarizer is not inherently present. In Ouderkirk and Weber, displays are disclosed that include a dichroic polarizer disposed between a liquid crystal light modulator and a reflective polarizer that reflects one polarization state and transmits the other polarization state, and where the transmission axis of the dichroic polarizer is aligned with the transmission axis of the reflective polarizer. In other words, these documents disclose the rear dichroic polarizer being oriented to block light reflected by the reflective polarizer, transmitting only the light transmitted by the reflective polarizer. Therefore, the claimed functionality cannot be said to be inherent.

For these reasons, the 103(a) rejection over Stolov in view of the admitted prior art and in further view of Schrenk should be overturned.

CONCLUSION

As detailed above, Appellants believe that the rejections of claims 9-17 should be reversed. Favorable consideration is respectfully requested.

Respectfully submitted,

14 Nov. 2001
Date

By Robert J. Pechman
Robert J. Pechman
Registration No. 45,002

Office of Intellectual Property Counsel
3M Innovative Properties Company
P.O. Box 33427
St. Paul, Minnesota 55133-3427
Telephone: (651) 737-0631
Facsimile: (651) 736-3833

APPENDIX A – Claims on Appeal

9. A reflective display, comprising

a light modulator provided to selectively alter a polarization state of polarized light passing through the light modulator, the light modulator having a viewer side and a back side;

a reflective polarizer positioned on the back side of the light modulator to reflect light having a first polarization state and to transmit light having a second polarization state; and

a rear dichroic polarizer positioned between the light modulator and the reflective polarizer to allow at least a portion of light reflected by the reflective polarizer to be transmitted back through the light modulator.

10. The reflective display of claim 9, wherein the reflective polarizer comprises a plurality of layers.

11. The reflective display of claim 10, wherein a refractive index difference between at least two adjacent layers along a first in-plane axis of the reflective polarizer is greater than a refractive index difference between the at least two adjacent layers along a second in-plane axis of the reflective polarizer.

12. The display of claim 9, wherein a high reflectivity axis of the reflective polarizer forms an angle between 0° and 90° with a transmission axis of the rear dichroic polarizer.

13. The display of claim 9, further including a supplemental light source disposed behind the reflective polarizer, the display being capable of generating an image under supplemental lighting conditions using the supplemental light source or under ambient lighting conditions using light incident on the viewer side of the light modulator.

14. The display of claim 13, wherein the display reverses image between ambient and supplemental lighting conditions.

15. The display of claim 13, wherein the display has an appearance of dark pixels on a diffusely lit background under both ambient lighting conditions and supplemental lighting conditions.

16. The display of claim 9, further comprising a diffusing element disposed between the reflective polarizer and the rear dichroic polarizer.

17. The display of claim 16, wherein the diffusing element substantially maintains the polarization of light reflected by the reflective polarizer.